

CLAIMS

1. A method for the manufacture of an ester by transesterification in which a starting material ester and an alcohol are brought into contact with a catalyst comprising (A) an amorphous zirconium oxide and (B) an oxide of Group III element, an oxide of Group V element, and/or an oxide of Group IV element other than zirconium and hafnium.

2. The method for the manufacture of an ester according to claim 1, wherein the starting material ester is in a liquid-phase state and an alcohol in a vapor-phase state are brought into contact with a solid acid catalyst comprising said components (A) and (B).

3. The method for the manufacture of an ester according to claim 1, wherein the starting material ester is an oil or fat, and the alcohol is methanol or ethanol.

4. The method for the manufacture of an ester according to claim 1, wherein the content of the amorphous zirconium oxide in the catalyst is 40 to 90 wt.% and the Group IV element oxide is titanium oxide and contained in an amount of 60 to 10 wt.% in the catalyst.

5. The method for the manufacture of an ester according to claim 1, wherein the content of the amorphous zirconium oxide in the catalyst is 90 to 98 wt.% and the Group IV element oxide is silicon oxide and contained in an amount of 10 to 2 wt.% in the catalyst.

6. The method for the manufacture of an ester according to claim 1, wherein the total content of the

oxides of Group III element and Group V element is, calculated as their elements, 0.5 wt.% or more based on the zirconium element weight, and the content of the amorphous zirconium oxide is 10 to 99 wt.% based on the catalyst weight.

7. The method for the manufacture of an ester according to claim 1, wherein the crystallization temperature of the amorphous zirconium oxide is 450°C or higher.

8. The method for the manufacture of an ester according to claim 1, wherein the Group III element oxide in the catalyst is aluminum oxide, and the content of the aluminum oxide is, calculated as the element, 40 to 1 wt.% based on the zirconium element weight.

9. The method for the manufacture of an ester according to claim 1, wherein the Group V element oxide in the catalyst is phosphorus oxide, and the content of the phosphorus oxide is, calculated as the element, 8 to 0.8 wt.% based on the zirconium element weight.